Inflammatory Bowel Disease: Crohn's vs Tuberculosis in India - Clinicians Dilemma

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Intestinal tuberculosis is a fairly well known disease to all clinicians in India and there have been several series reported especially from the surgical colleagues. In fact in any chronic abdominal condition tuberculosis comes up as a differential diagnosis. The major problem has been difficulty in proving the diagnosis prior to starting therapy. Diagnosis is often empiric with treatment response taken as proof. Among the diagnostic techniques the gold standard has been histopathology. Tissue available for pathology can come from peritoneal biopsies done at surgery or laparoscopy and intestinal resections. More recently colonoscopy can provide colonic or ileal biopsies which are restricted to the mucosa. A physician therefore relies on his clinical skills and radiology to suspect TB and occasionally finds help in the form of neck nodes or an abnormal chest X-ray. This unfortunate situation leads to either an under diagnosis or over diagnosis of abdominal TB.

The gold standard for diagnosis is histopathology with a classical caseating granuloma preferably with AFB demonstrated in them. Problems that arise are several:

Caseation may not be seen in all patients with TB especially in mucosal biopsies. The classical paper by Prof Tandon showed that caseation was seen mainly in lymph nodes. Therefore colonoscopic biopsies are rarely classical and often may show only non-caseating granulomas.

Granulomas are often more abundant in submucosa and hence only about 40% of endoscopic biopsies are diagnostic for granulomatous infection.

Patients often are operated after anti TB drugs which can modify the histopathology making diagnosis difficult in post treatment biopsies. AFB will also be absent after drug therapy.

Other diseases like sarcoidosis and Crohn's also give rise to granulomas though sarcoidosis is rarely encountered in the bowel wall.

Mycobacteria other than Mycobacterium tuberculosis occur as commensals in the human body and hence demonstrating mycobacteria alone cannot be taken as proof of TB.

Crohn's disease is a granulomatous disease that can involve any part of the GI tract from mouth to anus. The major sites of involvement are the small intestine and the colon. Small bowel strictures, fistulae and colonic ulcers with frequent perianal disease are features typical but not pathognomonic of Crohn's. The ulcers are multiple, discrete and serpiginous or geographical. Skip lesions with normal intervening mucosa and sparing of the rectum are often seen.

It has been largely thought to be a Western disease afflicting the Caucasians. Even in the early 1980's it was taught and believed that

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it was non existent in India. Gradually case reports found their way in Indian literature and by the mid 90's many gastroenterologists were seeing Crohns disease in India. Colonoscopy was the main tool that was available and the cases were very similar to the Western variety. However some differences that were highlighted included more colonic Crohns and less aggressive disease compared to the west. Indeed this phenomenon of increasing IBD - both ulcerative colitis and Crohn has been recognised all over South East Asia. Apart from increased awareness, availability of better diagnostic facilities there is an actual increase in the incidence of IBD in SE Asia.

What is common to both these diseases-
- Small and large bowel involved
- Perianal disease
- Granulomatous inflammation on biopsy

What is specific to Tuberculosis?
- Caseating granuloma
- Presence of Mycobacterium Tb

The facts are however not so clear; granulomas are seen only in few patients on mucosal biopsies and caseation is often seen only in the nodes. However, experienced pathologists can sometimes differentiate between the two with CD having smaller microgranulomas which are fewer in number. Mycobacterium avium paratuberculosis causes a similar disease in animals and has been implicated in Crohns as well. It becomes imperative to have a very specific test to pick up only Mycobacterium Tb and the previous PCR probes have been non specific with cross reaction with other mycobacteria. The recent data using the IS 6110 sequence has shown lot of promise. A positive culture is diagnostic but not often done and majority are culture negative. It is clear therefore that the diagnosis of Crohns is seldom easy and straightforward.

The clinician is therefore often confronted with a problem of a patient with ileocaecal disease or small bowel disease with histological granulomatous inflammation. Is it tuberculosis or Crohns? It has traditionally been emphasized that TB is very frequent in our country and may present atypically. Adding to the problem is the fact that less than 40% of these patients actually have granulomas in mucosal biopsies. The clinician is indeed caught between the devil and the deep sea - giving steroids to a patient with TB versus treating Crohns with ATT and delaying the diagnosis. A delayed diagnosis increases the risk of complications like strictures and fistulae. Our series of 130 patients shows a mean time period of 2.5 years before a diagnosis of Crohns was made. The problem of medical litigation is also a major issue adding to pressures in decision making.

We have a large series of over 130 patients with Crohns disease and this article reflects our approach to this difficult problem. Firstly, it is clear that Crohns disease is a problem that we see and indeed some colleagues see more Crohns than TB. Our decision is based on a combined assessment as outlined below:
- A good history is taken especially for extra intestinal manifestations which favours Crohns; high fever and toxemia favours TB.
- Clinical findings of peripheral nodes and hepatosplenomegaly favours TB while erythema nodosum or uveitis favours Crohns.
- We investigate these patients with a Chest X-ray and Mantoux - a strongly positive Mantoux makes us cautious in starting steroids but does not exclude Crohns.
Colonoscopic findings are extremely important in making a decision:

- Crohns: Involvement of the distal colon, aphthous lesions especially in descending or sigmoid colon, serpiginous ulcers and a gaping IC valve.
- Tuberculosis: Absence of above with lot of exudates over the ulcers
- Biopsy includes histopathology, AFB smear, PCR for mycobacterium tuberculosis and preferably a culture for mycobacteria.
- Radiology is not very useful in colonic disease but with small bowel disease - fistulisation and involvement of only one wall is a feature more commonly seen than TB.
- Capsule endoscopy has not been widely used to differentiate between the two but the appearance of the ulcers and more proximal small bowel involvement favours Crohns.

Using all the factors we then take a decision to initiate either ATT or steroids and meosalazine. The patient and family are counselled regarding the decision and the need for close follow up and possible revision of the diagnosis. We never use a combination of ATT and steroids at the onset and find that we have had to revise our diagnosis within 3 months in only 6 patients over past 10 years.

Conclusion

Both tuberculosis and Crohns disease are seen in our country and it is important to make a firm diagnosis and initiate therapy. Decision depends on several factors - clinical, colonoscopy, pathology and microbiology. The important point is to minimize the therapeutic mishaps due to a wrong diagnosis and monitor response closely to revise the decision if needed.